

Discovery Center: First Grade / Pre-First Lesson
“Super Bugs: Create an Insect”
Inspired by Honey Bees to the Rescue!
May 2015

Lesson Synopsis:

Super Bugs - Design Thinking Challenge: Utilizing the Engineering Design Process and their creativity, first grade students will create “Super Bugs” to solve Real Life (Student) Problems.

Objectives:

Students will experience the Discovery Center; employ basic Engineering Design Process; utilize technology tools; and, “look for [their] student learning”.

Basic Engineering Design Process:

Brainstorming; Planning; Creating; Modifying; Team problem solving

Cross-Curricular Integration:

PBL/STEM + IPC-Insects; Science; and, the Arts.

Insect Backgrounds:

IPC Student Research Projects. The various parts of a “typical” bug (examples: legs, head, eyes, pinchers, claws, feelers, fuzz, etc.); the shapes and colors they have seen on bugs (examples: round, oval, fat, skinny, red, green, black, etc.); the habitats of different bugs (examples: ground, trees, water); and, how bugs might protect themselves (examples: camouflage, stingers, scent); how they help human lives (examples: pollinate plants, destroy other harmful insects, improve the physical condition of soil).

Materials:

Wikispace Page + Videos; Art Materials; Sample “Super Bug”

Time:

Two class periods (30 minutes each): Session One = Steps #1-4; Session Two = Steps 5-7.

Procedure:

1. Introduction:
 - a. Define “Discovery Center” / “Engineers” = Problem Solvers; Creative-Innovators.
 - b. Show/Discuss “Honey Bees to the Rescue” and “Up and “At 'Em, Atom Ant!” Videos.

- c. Make Connections = Student IPC Investigations of Insects; discuss anatomy, habitats, etc.
2. Problem:
 - a. Create a "Super Bug" to solve a Real Life Student Problem (Select Hints).
 - b. Introduce the Engineering Design Process = Steps to Solve a Problem.
3. Brainstorm/Team Problem Solving:
 - a. What problem will your Super Bug solve?
 - b. How will your bug's anatomy (parts, shape, color) help it solve your problem?
4. Plan/Team Problem Solving:
 - a. Draw a simple sketch of your Super Bug (and/or) Select Materials.
 - b. Give your Super Bug a name.
5. Create: Build instruments following designs and using available materials.
 - a. Distribute black background paper. Direct students to develop their own insect creatures by tearing (no cutting allowed) the various parts of their bugs from colored construction paper and glue them to the black paper. Ask students to arrange all the parts before gluing in case something will need to be repositioned.
 - b. Make their bugs large enough to fit on the 9" × 12" black paper.
 - c. Make their bugs colorful. Use as many colors as necessary to complete their bugs
 - d. Give their bugs a personality. Their bugs can be happy, funny, modest, clever or any have other personality trait.
 - e. Give each bug a name (that can reflect the personality of their bug).
 - f. Put the bugs on display with the name of the bug.
6. Modify: Make adjustments/changes as needed.
7. Present: "Name, Problem, Description/Solution".

Assessment:

1. Student interactions/participation
2. Student "Super Bugs"
3. Student presentations
4. Student self- and peer-evaluation

Extension (Possible): Post to Wikispace.